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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,158	04/12/2005	Hee-Sup Shin	7037-70886-01	7490

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KLARQUIST SPARKMAN, LLP  
121 SW SALMON STREET  
SUITE 1600  
PORTLAND, OR 97204

EXAMINER

CHERNYSHEV, OLGA N

ART UNIT	PAPER NUMBER
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1649

MAIL DATE	DELIVERY MODE
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01/31/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/531,158

Applicant(s)

SHIN ET AL.

Examiner

Olga N. Chernyshev

Art Unit

1649

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 4-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) 5-9 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 04, 2007 has been entered.

### ***Response to Amendment***

2. Claims 1 and 4-6 have been amended and claim 2 has been cancelled as requested in the amendment filed on December 04, 2007. Following the amendment, claims 1, 4-9 and 11 are pending in the instant application.

Claims 5-9 and 11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on August 21, 2006.

Claims 1 and 4 are under examination in the instant office action.

3. Any objection or rejection of record, which is not expressly repeated in this action has been overcome by Applicant's response and withdrawn.

4. Applicant's arguments filed on December 04, 2007 have been fully considered but they are not deemed to be persuasive for the reasons set forth below.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1 and 4 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement for reasons of record in section 3 of Paper mailed on October 24, 2006 and in section 5 of Paper mailed on June 04, 2007. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicant traverses the rejection by presenting three documents to demonstrate that “[m]ice which lack expression of targets for anti-depressant drugs have been shown in the art to exhibit reduced immobility times in the tail suspension and forced swimming (behavioral despair) tests” (p. 4 of the Response). Applicant further submits that “one skilled in the art would be able to extrapolate that inhibitors of the gene knocked out in a mouse exhibiting reduced immobility in these behavioral tests would be useful in a method for treating depression” (p. 5). Applicant’s arguments have been given careful consideration but it is unpersuasive that transgenic animal models with altered genotype (knocked-out gene) are art-accepted models for compensating for the gene deficiency by administering the polypeptide encoded by the deficient gene.

As initial matter, Applicant is advised that the articles submitted with the Response are considered only in so far as they support Applicant’s arguments. For proper consideration of the

art of record, the documents must be submitted in accordance with the provisions of 37 CFR 1.97.

Claims 1 and 4 are directed to methods of treating depression by administration of inhibitors of  $\alpha$  1B subunit of N-type calcium channel. The instant disclosure is limited to demonstration that transgenic mice, which lack 1B N-type calcium channel gene (1B knockout mutant), performed differently during a forced swimming test and a tail suspension test (pp. 6-7, and Fig. 3 of the instant specification). The Examiner maintains that the instant specification fails to present any scientific reasoning as why inhibition of a functional channel (administration of an inhibitor compound) would have the same or similar effect as observed in an animal with a severed genotype (1B knockout mutant mice). Additionally, there are no working examples for administration of at least one inhibitor to support the working hypothesis and provide necessary guidance for a skilled practitioner.

It is obvious and well known in the art that no animal model can be totally and unconditionally predictive for any human disease, disorder or a complex condition in general and, therefore, it can be accepted only to a certain degree of similarity. Applicant submits article by Ramboz et al., which describes mice with altered 5-HT<sub>1A</sub> receptors as having “normal levels of 5-HT [...] possibly because of up-regulation of 5-HT<sub>1B</sub> autoreceptors” (abstract), thus confirming that knock-out gene does not necessarily mean complete absence of function of the lacking polypeptide. Further, abstract by Rupniak et al. states that acute pharmacological blockade of the receptor and knocking out the gene that encodes the receptor exhibit limited similarities (“due to possibly developmental alteration in the knockout mouse”, see bottom of the text). Finally, article of Xu et al. states that depression is a “complex physiological condition[s]

involving emotional, motivational and cognitive as well as neuroendocrine components” and that “the NET -/- mice might be useful in dissecting the molecular, cellular and behavioral mechanisms that underlie [the disorder]” (bottom at second column, p. 469). There appears to be no statements in the quoted literature to support Applicant’s argument that “inhibitors of the gene knocked out in a mouse exhibiting reduced immobility in these behavioral tests would be useful in a method for treating depression” as submitted at p. 5 of the Response. On the contrary, the art of record clearly indicates that experimental data obtained within knock-out animal models especially for complex behavioral pathologies cannot be directly extrapolated for pharmaceutical compensation of the gene deficiency.

In view of the lack of teachings, lack of support in the art as set forth above, and also the total absence of the working examples, the instant specification is not found to be enabling for a method for treating depression. It would require undue experimentation and making a substantial inventive contribution for the skilled artisan to discover how to use Applicants’ invention as currently claimed. Therefore, the instant rejection is maintained.

### ***Conclusion***

7. No claim is allowed.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga N. Chernyshev whose telephone number is (571) 272-0870. The examiner can normally be reached on 8:00 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey J. Stucker can be reached on (571) 272-0911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Olga N. Chernyshev, Ph.D.  
Primary Examiner  
Art Unit 1649

January 29, 2008